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THE UNIVERSITY OF ALBERTA

CALIFORNIA PSYCHOLOGICAL INVENTORY  
CHARACTERISTICS OF RECOVERED ALCOHOLICS

BY

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A THESIS

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## ABSTRACT

The aim of this study was to investigate the possibility of identifying and measuring certain psychological characteristics believed to be fundamental to recovery from the illness alcoholism. To this end, the California Psychological Inventory (CPI) was used in the belief that it was an instrument capable of distinguishing between those persons who make a successful recovery from alcoholism and those who do not recover. Two hypotheses were formulated:

1. That the mean scores on the CPI for those alcoholics subsequently judged to be recovered would be significantly higher than the mean scores of those alcoholics who do not recover on the following specific scales: Do, Wb, Sa, Sp, Sc, and So.

2. In consideration of the fact that the CPI as a whole is regarded to be a measure of social adjustment, it was also hypothesized that the Recovered Group would score higher than the Non-recovered Group on all 18 scales.

The original sample consisted of 84 white males presenting themselves for treatment at the Alcoholism Foundation of Alberta. Of these, 62 eventually comprised the study sample; 26 constituted the Recovered Group, 36 the Non-recovered Group. Means, standard deviations, and "t" test ratios between means were calculated on all 18 scales for the two groups.



To a large degree, both hypotheses were confirmed. In the case of the first hypothesis, the means of five of the six scales distinguished the Recovered Group from the Non-recovered Group: the Do scale (at the .05 level of significance), the Wb scale (at the .0005 level), Sp (at the .01 level), and Sc and So (at the .05 level). The hypothesis was not confirmed in regard to the Sa scale. In the case of the second hypothesis, 13 of the 18 scales showed significant differences between the means in favor of the Recovered Group. The hypothesis was not confirmed in regard to the following scales: Sy, Sa, Gi, Cm, and Fx. The results showed that there appear to be certain psychological characteristics related to social adjustment which can be associated with recovery from alcoholism.





## CHAPTER I

### INTRODUCTION

For centuries, the irksome problems created by the excessive use of alcohol have largely remained unsolved. Even at the present time, the etiology of this disorder is unknown and the variety of treatments available suggests that none is consistently effective (Mitchell, 1961; Hoff, 1961; Korman & Stubblefield, 1962). It is worth noting at this point that this state of affairs is not unique to the area of alcoholism. The field of psychotherapy in general, under which the specific treatment of the illness alcoholism is usually subsumed, has as its major concern the inconsistency and unpredictability of its results. As Gallager (1954) has pointed out, the challenge facing those engaged in psychotherapy is not so much the development of therapeutic methods, but rather the development of techniques which will indicate those cases in which psychotherapy is most likely to be effective.

The search for some criteria of "suitability" whereby a client may be evaluated in terms of potential success following treatment is well documented both in and out of the field of alcoholism (Bacon, 1951; Katz, Lorr & Rubenstein, 1958; Lowe, Douglas, & Fowler, 1960; Moore & Ramseur, 1960; Machover & Puzzo, 1959; Mindlin, 1959; Rubenstein & Lorr, 1956; Sullivan, Miller, & Smelser, 1958; Windle 1952; Taulbee,





1958; Zwerling, 1959). The main reasons for such prodigious efforts appear to be related to the availability of treatment facilities. Some criteria of "suitability", generally referred to as prognostic indices, would be of immeasurable value both in those instances where treatment facilities are able to meet all the demands made upon them, and in those instances, perhaps more typical, where a given agency encounters a population larger than it can accommodate. In either case, a prognostic index would be of assistance in the early identification of "premature terminators"<sup>1</sup> (Rosenberg, 1954), and of those clients who are least likely to benefit from therapeutic treatment. In the case of the agency with limited facilities the necessity for a prognostic index becomes, in addition, a matter vital to economy, efficiency and treatment research.

It was within the context of these considerations that the present study was designed and conducted at the Alcoholism Foundation of Alberta.<sup>2</sup> Its principal aim was to investigate the possibilities of obtaining data which might be used in the future development of an out-patient prognostic index. While it was never the intention to generalize from such a specific sample (alcoholics) to the psychotherapeutic community as a whole, it was felt that the study was

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<sup>1</sup>Those clients who discontinue treatment after one or two interviews.

<sup>2</sup>Abbreviated to Foundation.



addressed to a problem common to agencies similar to that in which it was conducted, and further, that it was not without bearing upon the general problem associated with unpredictable recovery rates.

### Background of the Study

The Alcoholism Foundation of Alberta is a psychiatrically oriented out-patient clinic for the treatment of alcoholics, with well-established centres in both Edmonton and Calgary. Services to outlying centres are currently being developed in several communities throughout the Province. Two fundamental assumptions underlie its treatment program:<sup>1</sup>

1. Alcoholism is an illness which can be arrested and from which a total recovery can be made.

2. The alcoholic patient, now characteristically incapable of meaningful social interaction, has, in a majority of cases, been a normal and reasonably adequate person.

Since its inception in 1953, the treatment policy has embraced the so-called "team approach", represented in the combined resources of, a) consulting psychiatrist, b) medical services, c) individual counselling, and d) group therapy. During these years, changes in the treatment staff have been frequent. As a consequence, the disciplines represented at any time have varied, and similarly, the

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<sup>1</sup>  
Policy Manual of the Alcoholism Foundation of Alberta. (1954).





treatment techniques. Related to this, and of primary importance to this study, is the observation that the recovery ratio has remained relatively constant in spite of these changes. In point of fact, a seven year estimate made from Foundation records indicates that complete sobriety is achieved only by 26%, some improvement by 29%, and no improvement by 35%.<sup>1</sup>

For most public reporting purposes, the Foundation divides patient trends into a) Recovery Indicated, and b) No Recovery Indicated (Wilby, 1960). Category (a) includes the somewhat contentious classification "Partial Recovery" designed to apply to those clients who are still drinking but at an allegedly reduced rate. Due to difficulties arising out of interpretation of this classification, this study has limited its concern to the simple dichotomy: 1) Recovered-not drinking, and 2) Not Recovered - still drinking. Since a reliable behavioural criterion is met by (1) in maintenance of complete sobriety, it was felt that a comparison of this group data and a composite of the remainder was justified. Precedence for this procedure was found in a prognostic study conducted with alcoholics by Lowe & Fowler (1960).

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It is estimated that at any given time, approximately 10% of the cases are awaiting classification.



## Theoretical Considerations

Analysis of the Foundation ratio of recovered alcoholics to non-recovered alcoholics reveals that approximately one in four may be expected to recover. This observation, central to the purposes of the present enquiry, provokes two crucial questions. The first, why do certain clients respond favorably to treatment and others not? The second, is it possible at the time of intake to distinguish those most likely to respond to treatment from those who are not? Contained in the literature are many attempts to answer these questions, conveying both the complexity of the problems of alcoholism<sup>1</sup> and the diversity of viewpoints (Gibbins, 1953; Machover, Puzzo, & Plumeau, 1962). Investigations of treatment records by the Foundation Research Department tend to bear out the general observation that to date no one set of variables consistently seems to favor recovery than another. Additional complications are imposed when consideration is given to factors such as the multi-varied therapeutic approaches and their relative efficiency, the differences to be found in individual therapists, and the individual differences of the clients themselves.

These discouraging conclusions notwithstanding, the writer remained convinced that certain psychological

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<sup>1</sup> Proceeding of the First Annual Alberta Conference on Alcohol Studies, Edmonton. The Alcoholism Foundation of Alberta, 1954.





characteristics related to social adjustment could be associated with recovery from alcoholism. Furthermore, following Rosenberg (1954), it was believed that regardless of the way in which these characteristics interact with other important variables (therapist, therapeutic technique, environment and interaction of these) they would be reflected in certain psychological tests. Additional conviction for this view was given by Windle (1952) who, following a review of the literature, indicated that the important factor in therapeutic development was some characteristic of the individual, rather than of a specific type of therapy or therapist.

The theory underlying the present study is mainly concerned with the social aspect of the alcoholic's adaption. In agreement with the statement made by Machover, Puzzo, & Plumeau (1962), it was felt that the alcoholic's behaviour, its effects on others, and upon himself, "results in social isolation and in an attenuation of such degrees of social identification and social affiliation (social adequacy) as may have been achieved prior to addiction to alcohol". While the degree of pre-addictive development in the case of any given individual must be assumed to vary at random, it was felt that those persons who ultimately recover achieve optimum social adequacy prior to addiction. This, it was thought, made recovery a function of individual dynamic resources in such areas as self-awareness and capacity for meaningful interpersonal relationships. Conversely, it seemed plausible that



those persons failing to recover were either lacking or less amply endowed in these attributes.

### The Specific Value of a Prognostic Index to the Foundation

Although the Foundation assumes a responsibility to all who seek help with the problem of alcoholism, experience reveals that certain alcoholic clients cannot hope to receive much benefit from the available treatment techniques. This, according to Mindlin (1958) is an experience shared by many, if not all, similar out-patient centres on the North American Continent. A prognostic index, were one available, should provide data having far reaching consequences for the Foundation treatment program. Use of the index, for instance, would be expected to assist the counselling staff in identification of those clients least likely to benefit from existing treatment practices. This in turn should encourage treatment research designed to discover new forms of therapy which would hopefully meet the needs of more people suffering from alcoholism. In summary, a prognostic index could conceivably play a central role in the clinic's treatment plans and in overall policy formulation with the ultimate goal of providing more effective services to a larger population.

### The Hypotheses

The aim of this study was to investigate the possibility of identifying and measuring certain psychological





characteristics believed to be fundamental to the recovery from the illness alcoholism. To this end, the California Psychological Inventory was employed in the belief that it was an instrument capable of distinguishing between those persons who recover from alcoholism and those persons who do not recover. It was hypothesized that:

1. The mean scores for those alcoholics subsequently judged to be recovered (Recovered Group) would be significantly higher than the means of alcoholics who did not recover (Non-recovered Group) on the following CPI scales: Do (dominance), Wb (sense of well-being), Sa (self-acceptance, Sp (social presence), Sc (self-control), and So (socialization).

2. In consideration of the fact that the CPI as a whole is regarded to be a measure of social adjustment, that the mean scores for the Recovered Group would be significantly higher than the Non-recovered Group on all 18 CPI scales.



## CHAPTER II

### REVIEW OF THE LITERATURE

#### Earlier Findings Related to Prognostic Indicators, Introduction

While this study was specifically addressed to the field of alcoholism, a dearth of research relative to prognostic indicators in this area precipitated a more generous review of the literature to include similar studies conducted with non-alcoholic populations. Studies in the latter realm were found to be varied and more numerous, but in essence no less discouraging. Both areas of research were notable for a lack of consistency in results among independent investigators and an apparent reticence in many cases to conduct validation studies. In the field of alcoholism this state of affairs was sublimely epitomized in disagreement even among those investigators whose objective was to review the literature. Bacon (1952), for instance, in a ten-year review, concluded that the outstanding characteristic of psychological studies concerning alcoholism was their relative absence in a field otherwise marked by prolific publication. Lowe & Fowler (1960) agreed with this general conclusion, and particularly emphasized the paucity of studies concerned with prognosis. On the other hand, Mindlin (1959) was of the opinion that research for prognostic indicators for alcoholics was anything but a novel idea.

It will be seen from the foregoing that, although the





present study was not in principle entirely without precedent, past investigatory work offered little that was conclusive. As a consequence, the review of the relevant literature in this chapter is presented and discussed under three main headings:

1. Studies which illustrate the disparity of viewpoints and findings.
2. Studies of a more consistent nature which are deemed in some way to support an hypothesis which equates social adequacy with successful recovery.
3. Studies useful to the present enquiry conducted with non-alcoholic populations.

The chapter concludes with an integration of these findings and attempts to show their relationship to the selection of the California Psychological Inventory, the instrument chosen to test the hypotheses.

#### Alcoholic Studies which Illustrate a Variety of Conclusions

In 1951, Straus & Bacon, following a study of 2,023 male clinic patients, indicated that the out-patient clinic is especially useful for the alcoholic whose social stability is not subsequently impaired. It was concluded that a scale of social stability was a good prognostic index for recovery.

Mindlin (1959) compared several different alcoholic groups and found eight characteristics which showed highly significant differences in incidence in the success and



failure groups. These were: present economic resources, usual occupation, arrest record, motivations, current intellectual function, diagnostic category and Rorschach signs. These items were combined into a prognostic index which correctly identified 80% of a validation group of 60 cases.<sup>1</sup>

In contrast, a study by Lowe & Fowler (1960) compared recovered alcoholics with non-recovereds on seven social variables and found no significant difference between the two groups. The authors pointed out that their findings differed sharply with those obtained by Mindlin on similar variables, and suggested that a clinic population was a markedly homogeneous one with social variables offering little basis for prediction.

A follow-up study involving 50 alcoholics, completed by Davies, Shepherd, & Myers (1956), indicated that data having no prognostic significance were: age, sex, source of referral, length of drinking, level of intelligence, and social class.

The Minnesota Multiphasic Personality Inventory (MMPI) was tested as a prognostic indicator by Lowe & Fowler, in 1960. The sample consisted of 153 male white alcoholics. In the follow-up study, those who recovered (complete sobriety) were compared with those who did not meet this criterion. The results: on four of the clinical scales

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<sup>1</sup>  
According to personal communication with Mrs. Dorothee Mindlin, no further validation studies were conducted.





those who recovered made significantly lower scores. The authors' tentative conclusion: The MMPI may have value as a prognostic indicator.<sup>1</sup>

Two independent studies using different batteries of psychodiagnostic tests, and one interdisciplinary study, all reaching similar conclusions are next cited.

Kepner (1961) in a study carried out at the Cleveland Centre on Alcoholism, administered at time of intake the MMPI, Hollingshead's Two-Factor Index of Social Position, and the Straus-Bacon Index of Social Stability, to 88 male subjects. The results: no relationship was found between social position, social stability and social deterioration, on the one hand, with recovery, on the other. The author concluded that the data did not provide definitive insight into the nature of the resources which enables one group of alcoholics to recover, another not.

A similar conclusion was reached by Machover & Puzzo (1959). A battery of eleven psychodiagnostic tests was administered to alcoholic clients at time of intake. At a later date, two groups of 23 each, one comprised of recovered alcoholics, and one of non-recovered alcoholics, were equated in age, ethnic background, severity and duration of alcoholism, exposure to therapy, and intelligence. The authors reported

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According to personal communication with Dr. R.D. Fowler, validation studies are being conducted, but results are not available.



that alcoholics who recovered did not possess personality traits or patterns which distinguished them from those alcoholics who did not recover.

A third investigation indicating the same results was an interdisciplinary study conducted by Zwerling from 1954 to 1959. Twenty-three recovered alcoholics were compared with twenty-three non-recovered alcoholics. The author indicated that on variables such as age, education, intelligence, ethnic background, years a problem, history of arrests, and clinical diagnoses comprising ten categories, an impression of sameness ran through the group.

A study by Stephenson (1959), carried out at the Alberta Foundation, was designed to test the hypothesis that a prognostic index could be constructed from treatment records alone, disregarding psychological function and personality structure. While the data proved to be inadequate for this purpose, Stephenson found that of twenty-one items examined, a significant difference between recovered and non-recovered alcoholics obtained on the variables of occupation, ownership of property, marital status, stage of alcoholism, pattern of alcoholism and physical condition at first contact. Unfortunately, more recent and continuing Foundation studies using similar data have not proved to be as successful.<sup>1</sup> Cumulative evidence more than suggests that no single variable

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These studies, on file at the Alcoholism Foundation of Alberta, are available for inspection.





taken from treatment records significantly differentiates between the alcoholic who recovers and the alcoholic who does not.

#### Studies related to Social Adequacy

Social adequacy and its relationship to prognosis was examined by Fowler & Schneider for the Alabama Commission on Alcoholism in 1960. The purpose of the study was to determine any factors that might be related to a favorable response to treatment. Using the University of Tennessee Deprivation Scale to rate social adequacy, a significant difference between those alcoholics who recovered and those who did not recover was confirmed at the .05 level.

Fitzhugh, Fitzhugh, & Reitan (1960), in a follow-up study based on the administration of the Weschler-Bellevue (WB) at time of intake, found successful recovery to be a function of ability to mobilize adaptive resources. This finding appeared to be supported by at least two other studies: Moore & Ramseur (1960) found that while the two groups (recovered and non-recovered) did not differ significantly in age, drinking pattern, duration of alcoholism, sibling position, marital adjustment, maladjustment in parental families, education or intelligence, significant differences were observed in capacity for cooperating, insight, and ability to form good personal relationships.

A study by Wallerstein (1956) with similar results was





found to be of particular interest to the present undertaking. Involving 178 hospitalized alcoholics, his project was designed to test the effect of three different therapy methods; antabuse, conditioned reflex, and hypnotherapy. Wallerstein reported that the factor common to the best prognosis for each group, including a control group, was the capacity for meaningful interpersonal relationships.

#### Pertinent Studies Conducted with Non-alcoholic Populations

It has been noted that the foregoing studies were addressed specifically to the problem of the alcoholic. Since the literature clearly indicates the unlikelihood of any such entity as an alcoholic personality (Korman & Stubblefield, 1961; Murphy, 1956; Mitchell, 1961; Sutherland, Schroeder, & Tordella, 1950; Schaefer, 1954; Syme, 1957; Zwerling, 1959), the search for prognostic indicators in non-alcoholic therapy situations assumes greater importance to the researcher in the field of alcoholism than perhaps was formerly recognized.

Unfortunately, a majority of these studies have proved neither to be any more significant nor, for that matter, any less inconsistent than those directed specifically to the problems of alcoholism (Eskey & Friedman, 1958; Katz, Lorr, & Rubenstein, 1958; Windle, 1952). For example, Rogers & Hammon (1953) investigated 109 Rorschach records but were unable to find any factors that were predictive of the outcome



of treatment. Conversely, and in the same year, Kotlov & Meadows indicated that certain Rorschach variables clearly differentiated between patients who continued in therapy (analogous to recovery) and those who did not. Auld & Heron (1953) however, applying the Kotlov & Meadows prediction formula to a new sample of patients, found that it had no predictive value.

On the other hand, several investigations have been completed having significant results which encouraged the formulation in the present study of a social adequacy hypothesis. Taulbee (1958) confirmed an hypothesis that there are certain identifiable personality variables which are related to therapy prognosis. Using the MMPI and the Rorschach on 85 diagnosed psychoneurotics, he found those who improved to have better potential for self appraisal and emotional responsiveness.

Barron (1953) using the Weschler and the MMPI, found that the level of integration of the patient at the beginning of psychotherapy was positively associated with recovery (those better off to begin with are most likely to improve), a contention implicit in the present study. In a related cross-validation study, (1953a) in which an MMPI scale developed for prognostic use was tested, the same author reported improvement significantly related to personal adaptability and resourcefulness.

This review of the literature, while not exhaustive,





tends to confirm the findings of Windle (1952). After reviewing prognostic studies done to that date, that author found comparisons among studies revealed little agreement regardless of the various techniques used. The present writer has attempted to point out, however, that not a few studies having significant results--studies concerned both with alcoholic and non-alcoholic populations--related successful recovery, however defined, to such entities as social stability, social adequacy and general adaptive potential (Barron, 1953, 1953a; Davies, Shepherd, & Myers, 1956; L.C. Fitzhugh, K.B. Fitzhugh, & Reitan, 1960; Moore & Ramseur, 1960; Taulbee, 1958; Wallerstein, 1956). While this observation is central to the hypothesis of the present study, the possible influence of such specific variables as age, intelligence, occupation, socio-economic rating, etc., was not overlooked. The differences in regard to these variables among alcoholics, however, whether recovered or not, casts serious doubt upon their potential as prognostic indicators. As pointed out in investigations by Halpern (1946) and Rae (1944), the alcoholic is not limited to any particular intellectual, occupational or educational level.

#### The Relevance of the California Psychological Inventory

As the foregoing review indicates, research conducted to isolate potential prognostic indicators using psychometric tests is far from conclusive. It appears to this writer,



however, that the most promising investigations are those concerned with variables related to social behaviour. After due consideration of both the work already done in this area and the tests currently available, the decision was made to utilize the CPI.<sup>1</sup> To reach this decision, two major questions had to be satisfactorily answered. This first, is a test which, according to its author, is primarily for use with "normal" subjects appropriate for use with a population not generally so regarded? The affirmative answer was reached in several ways. Gough, himself, suggests that "normal" subjects are those "non-psychiatrically disturbed". (Gough 1957, p.7). If problems of definition are put on one side, the sample population investigated in the present study was deliberately screened to exclude psychiatric cases. While the writer was not naive enough to believe the sample then consisted of "normal" subjects, on the grounds that a majority are conceived to have been relatively normally functioning people prior to addiction, and that recovery is related to this, it was felt that the use of the test was justified.

Further encouragement was experienced after noting the use of the test with other "non-normal" populations. Nichols & Beck (1960) successfully used the CPI with 75 therapy subjects to investigate factors in psychotherapy change. Hirt & Cook (1962) using the CPI with three groups of military

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<sup>1</sup> See appendix "I" for scale names and class groups.





offenders, obtained results which led them to agree that the Inventory was an effective measure of different levels of socialization.

The second question concerned the validity of the test as a measure of what in this study has generally been referred to as social adequacy. Confirmation, it was felt, was readily available. The Inventory, again according to its author, is "addressed principally to personality characteristics important for social living and social interaction". The scales are intended, he states, "to provide a comprehensive survey of an individual from a social interaction point of view". (Gough 1957, p.7). The efficacy of the Inventory as a measure thus defined has been examined in several studies with encouraging results. Nugent 1961; Sarbin & Hardyck 1955; and Mitchell & Pierce-Jones 1960, in general, found support for the appropriateness of the scales as a measure of social effectiveness and social adjustment.

One final thought in this connection; it has been shown that studies using an extensive variety of tests related to therapy prognosis are well documented in the literature, but have invariably produced inconsistent results (Windle, 1952; Lowe, Douglas, & Fowler, 1960). As far as can be ascertained,<sup>1</sup> the CPI has not been employed in the field of alcoholic research with a view to assessing its potential for distinguishing between alcoholics who make a successful recovery and those who do not.

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<sup>1</sup>Personal communication with Dr. Harrison G. Gough.





## CHAPTER III

### PROCEDURE

#### Selection of the Sample

To minimize the possibility of obtaining a biased sample, all white males presenting themselves for treatment at the Foundation during the period of the study were initially considered to be subjects and accordingly completed the test requirements. The original sample thus obtained numbered 93. In this time, nine of the subjects were excluded, seven following discovery that they had formerly received treatment at the Foundation, and two who were considered not to be alcoholics. The remaining 84 subjects were diagnosed to be suffering from alcoholism, defined by the Foundation to mean "a condition wherein the use of alcohol results in continuing and progressively serious problems in any area of an individual's life, usually characterized by a progressive loss of control".<sup>1</sup>

#### Test Description and Administration

The measuring instrument used in this study was the California Psychological Inventory (Gough, 1957) a self-administering test having 480 true/false items. Instructions

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<sup>1</sup> Policy Manual of the Alcoholism Foundation of Alberta, 1954.



appear on the booklet cover.<sup>1</sup> In practically all cases, the scoring of each individual's answer sheet was completed by one member of the Foundation Research Department, and not by the writer. Raw scores thus obtained were converted to standard scores.

Since it is Foundation policy to have each client examined by the medical department during the initial contact, agreement was reached whereby one member of that department assumed the responsibility for test administration. With few exceptions, the test was administered during the first intake interview. The exceptions included those clients who arrived at the Foundation at an inappropriate time--in which case the test was given during the second interview--and those clients who arrived at the Foundation intoxicated and/or acutely ill.

The decision to administer the test during the first intake interview was made for the following reasons: approximately 48% of those clients applying for treatment drop out before four interviews have been completed. It is further estimated that 30% drop out after the first interview.<sup>2</sup> Since it is not known at the time of the first interview who may or may not discontinue treatment early, administration of the test on this occasion was thought to minimize the chance of obtaining a biased sample.

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<sup>1</sup>  
See appendix "G"

<sup>2</sup>  
See appendix "F"





### Criterion for Recovery

The criterion for recovery in this study was defined as being complete abstinence for a period of not less than five months from the time of entry into the Foundation treatment program. The possible use of some measure of improvement in social relationships was investigated but abandoned. Of several reasons for this decision, two are deserving of mention. It is notably difficult to assess the severity of a drinking problem, making a measure of improvement in such a short time almost meaningless. In addition, a reliable behavioural criterion is met by maintenance of complete sobriety for a specified time.

### The Problem of Meaningful Follow-up

As noted, the criterion set in this study for recovery was five months of complete sobriety. The question this raised concerned the period of time that should elapse between intake and follow-up interviews in order to ensure meaningful results. A partial answer was found following evaluation of a study conducted by Gerard & Saenger (1959). These investigators recommended that follow-up studies of one year duration were probably the most reliable. Such a recommendation has obvious merit if the population under consideration is a stable one; for example, if all those subjects in the original sample remain in contact. On the other hand, if the population served by a given agency is regarded to be



transient by nature (a designation in many ways appropriate to the area in which the present project took place), such a follow-up period has serious limitations. In the first place, it can be claimed that the results of any such study are a function of the accessibility of former clients, and to this extent biased. In the second place, and with particular reference to the Foundation, it has been reliably shown that the number of former clients that can be contacted is inversely related to the elapsed time of the study.<sup>1</sup> As a consequence, the longer the study the greater would seem to be the loss in data which, were it available, would be invaluable to trend analyses and treatment research projects. It was in an attempt to minimize bias due to the first mentioned limitation, and to capitalize on potential data a short study is held to provide, that a follow-up period of five months was considered to hold the most potential. This decision was not entirely without precedent. Davies, Shepherd, & Myers (1956) collected follow-up data at monthly intervals for two years on 50 alcoholics and found that 90 per cent of those who resumed drinking did so within six months--and nearly all within three months. The authors contended that predictions

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Foundation records show that a 6-month follow-up study results in a loss of 10 per cent of the sample, a 12-month study in 27 per cent, and an 18-month study in 50 per cent. These figures are based only on those clients who stayed in treatment for four or more interviews. The loss figures are appreciably higher if those clients who drop out of treatment after one or two interviews are included.



made during this period would result in prognostic misclassification of less than 20 per cent of all cases.

#### Method and Reliability of Classification of Subjects

The problem in this instance was to find a reliable method of classifying the subjects into either the Recovered Group or the Non-recovered Group. Difficulty was especially anticipated in regard to the reliability of the information obtained from those subjects claiming complete sobriety in terms of the criterion requirements. As a consequence, in practically all cases the available subjects were interviewed by the writer. Wherever possible and applicable, verification of the subjects' claims was obtained from spouses, relatives and employers. These interviews were conducted without prior knowledge or inspection of the CPI data. In addition, an independent appraisal of each subject's condition was made by members of the Foundation counselling staff.





## CHAPTER IV

### RESULTS

#### Description of the Sample

The sample consisted of 84 white males, all of whom completed the CPI during the initial intake interview. Twenty-two of this number were found not to meet the requirements of the study. They were excluded for the following reasons: one died, six were diagnosed as having complicated psychiatric problems, and 15 were not available for follow-up. The data for the last-mentioned revealed marked homogeneity in all aspects. In view of this, while the means were computed,<sup>1</sup> further analysis was considered unnecessary. The remaining 62 subjects were interviewed in accord with the experimental design. The criterion of recovery was met by 26 subjects, hereafter referred to as the Recovered Group, and was not met by 36 subjects, hereafter referred to as the Non-recovered Group.

With regard to the Recovered Group, inspection of Table I reveals that a majority maintained sobriety for a period in excess of six months. A word of caution, however, must be inserted at this point. The information obtained from the second contact at the close of this study was not verified

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<sup>1</sup>  
See appendix "D"



by a second observer. On the other hand, the information was obtained from the Foundation counselling staff. Its value therefore should not be disregarded.

TABLE I

TOTAL ABSTINENCE SINCE FIRST INTAKE  
INTERVIEW FOR RECOVERED GROUP N = 26

Percent of Sample	Months of Sobriety
100%	5
64%	6
40%	7
20%	8

Although it was never the intention to conduct a study with matched groups, on the basis of Foundation experience it was anticipated that sample homogeneity would obtain.<sup>1</sup> To a large degree this proved to be the case. Three variables were selected for illustration: education, marital status and age.<sup>2</sup>

It is shown in Table II that a significant difference exists between the Recovered Group and the Non-recovered Group in educational background. Some interpretation of this result is required. For the purpose of chi square analysis, the data were compared for three ranges in education: 3-7

1  
See appendix "E" for classification by occupation.

2  
A five-year study recently completed by the Foundation showed no connection between these variables and recovery from alcoholism.





years, 8-11 years, and 12-17 years. Little difference was found to exist in the latter two ranges, but in the former, no subject in the Recovered Group had less than eight years of education, whereas seven subjects in the Non-recovered Group had.

TABLE II  
EDUCATIONAL BACKGROUND  
RANGE IN YEARS AND MEDIAN OF TOTAL  
AND SUB-GROUPS

Classification	N	Range in Years	Medians
Recovered Group	26	8-17	11.16
Non-recovered Group	36	2-16	10.25
Total Group	62	2-17	10.75
$\chi^2$ - 7.17      df-2      Signif. at .05 level			

For the purpose of testing the significance of the difference between the Recovered Group and the Non-recovered Group on the variable of marital status, the data were divided into "married" and "other" categories. Inspection of Table III shows no significant differences on this variable. This result was also found in studies done in 1960 by Moore & Ramseur, and Lowe & Fowler.



TABLE III

MARITAL STATUS OF RECOVERED GROUP  
AND NON-RECOVERED GROUP

Category	Recovered Group N = 26	Non-recovered Group N = 36
Married	22	25
Other	4	11
$\chi^2 = 1.157$		1 df N.S.

Attention is drawn to the observation, however, that no unmarried subjects made a successful recovery. Since in general fewer single clients apply for treatment for alcoholism than married clients, this finding might in part be explained by the relatively small sample used in the study. Foundation records reveal conclusively that single clients have recovered.

As indicated in Table IV there were no significant differences between the ages of the Recovered Group and the Non-recovered Group.

TABLE IV

AGE RANGE AND MEDIAN OF TOTAL  
GROUP AND SUB-GROUPS

Classification	N	Age Range	Median
Recovered Group	26	30-59	35.00
Non-recovered Group	36	24-64	36.66
Total Group	62	24-64	36.66
$\chi^2 = .037$		df 2	N.S.



## Test Results

In a preliminary examination of the standard scores on the 18 CPI scales for both the Recovered Group and the Non-Recovered Group, it was found that the scores were distributed normally. Since the hypotheses of this study assumed that the Recovered Group means for certain scales would be greater than the means of the Non-recovered Group, statistical procedures<sup>1</sup> were carried out to determine if significant differences existed between the two groups. The data for both samples was combined to ensure the best unbiased estimate of population variance, the F ratio was used to test the significance of the difference between the two group variances, and the "t" ratio to determine whether or not the differences between means on the 18 scales for both groups were significant. Since a prediction was made in the hypothesis with regard to the direction of the difference, a one-tailed "t" test was employed.

Table V includes the means and standard deviations for the Recovered Group and the Non-Recovered Group on each scale, the "t" test results, and the significance level of the differences between the means.

The results shown in Table V indicate significant differences between the two groups on 13 scales, no significant differences on 5 scales. Both hypotheses were thus to a

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<sup>1</sup>

See appendices "A" and "B" for formulae and general statistical procedures (Ferguson, 1959, Ch. 10).





TABLE V

MEANS, STANDARD DEVIATIONS AND "t" TEST RATIOS;  
RECOVERED GROUP AND NON-RECOVERED GROUP FOR  
SCALES OF THE CALIFORNIA PSYCHOLOGICAL INVENTORY

SCALE	MEAN		STANDARD DEVIATION		"t" ratio	SIGNIFI- CANCE LEVEL*
	Recovered Group N = 26	Non-Recov- ered Group N = 36	Recovered Group N = 26	Non-Recov- ered Group N = 36		
Do	46.00	40.97	14.07	12.1	2.093	.05
Cs	45.26	37.55	10.93	10.92	2.730	.005
Sy	43.23	39.53	10.78	12.27	1.209	N.S.
Sp	46.15	36.91	10.06	10.96	3.311	.01
Sa	49.80	45.00	13.68	10.79	1.542	N.S.
Wb	46.76	33.05	10.04	15.01	4.032	.0005
Re	44.03	39.11	8.61	8.62	2.221	.05
So	39.81	35.22	8.04	9.70	1.987	.05
Sc	44.73	40.75	9.90	6.87	1.851	.05
To	44.15	34.27	10.26	11.70	3.450	.01
Gi	40.73	40.61	9.03	10.86	.046	N.S.
Cm	54.80	51.72	7.67	9.27	1.388	N.S.
Ac	41.57	33.47	8.45	9.48	3.523	.0005
Ai	50.53	38.25	8.22	8.32	5.734	.0005
Ie	41.80	29.50	9.89	13.25	3.995	.0005
Py	46.38	41.22	9.97	11.48	1.842	.05
Fx	49.23	43.11	8.01	9.75	2.615	.01
Fe	54.61	57.13	9.29	8.98	1.076	N.S.

\* One-tailed Test.



large measure confirmed. Specifically, as predicted in the first hypothesis, the mean differences between the two groups were significant on the following scales: Do (dominance), Sp (social presence), Wb (sense of well-being), So (socialization) and Sc (self-control). The hypothesis was not confirmed with regard to the Sa (self-acceptance) scale. The five scales not confirmed in the second hypothesis were: Sy (sociability), Sa (self-acceptance), Gi (good impression), Cm (communality) and Fe (femininity). When considering the differences between the two groups, it should be noted that the CPI profile means<sup>1</sup> indicate a distribution which falls fairly consistently below normal.

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<sup>1</sup>  
See appendix "H"





## CHAPTER V

### DISCUSSION OF RESULTS

This chapter will begin with a brief discussion of the CPI scales selected in this study to test the first hypothesis, with some comments on the use of the full scale to test the second hypothesis.

When the project was first conceived, the selection of scales most likely to test this hypothesis posed a major problem. Without any apparent precedent in the field of alcoholism, attention was turned to similar use of the CPI in non-alcoholic research. After due consideration, the studies reviewed seemed, for one reason or another, not to be appropriate to the present undertaking. Both Mitchell & Pierce-Jones (1960) and Nichols & Beck (1960) conducted factor analyses of the scales with results which at first seemed to be pertinent. In both cases, the factor with the highest loading was comprised of the scales Wb (sense of well-being), Re (responsibility), To (tolerance), Gi (good impression), Sc (self-control) and Ac (achievement via conformance). However, while the former authors considered this constellation to represent adjustment by social conformity, the latter authors suggested it related to adjustment through poise and interpersonal relationships. The degree of disparity between these two views may well be argued, but in view of the focus of the present study upon social effectiveness,



other scales were felt to have as much, if not more, potential to test the hypothesis, namely: Do (dominance), Sp (social presence), Sa (self-acceptance), Wb (sense of well-being), So (socialization) and Sc (self-control).

The second hypothesis, admittedly, was based on fewer specific considerations than the first hypothesis. It seemed feasible, though, in view of the theory underlying the CPI, that successful recovery from alcoholism would be reflected in total social adequacy, and therefore in total gains for the Recovered Group over the Non-Recovered Group on all scales.

Turning now to the first hypothesis, the significance level of two scales in particular warrant comment: Sp (social presence) significant at the .01 level, and Wb (sense of well-being) significant at the .0005 level. In keeping with the expectations of this study, it might be inferred from these results that prior to addiction, the characteristics implicit in these two scales were reasonably well developed in those persons who ultimately recovered from alcoholism. Such persons would be thought to have acquired self-confidence in personal and social interaction, and to have been relatively free from self-doubt and disillusionment.

Reference to the second hypothesis and the results obtained (13 scales significant, 5 not significant) seems to lend credence to this supposition. Of especial relevance to the theory basic to this study are the four scales which differentiated significantly between the Recovered Group and





the Non-recovered Group at the .0005 level: Wb (sense of well-being), Ac (achievement via conformance), Ai (achievement via independence), and Ie (intellectual efficiency). It was theorized, it will be remembered, that the person most likely to recover from alcoholism would probably have achieved optimum social adequacy prior to addiction. It was also speculated that the person who makes a successful recovery does so, presumably with the aid of therapy, because he is in possession of resources upon which to draw. Might it not be inferred from the results obtained on these four particular scales that the characteristics they represent comprise a core of resources central and necessary to the process of recovery? If this inference can legitimately be made, it seems to follow that the person who recovers will at one time be found to have developed meaningful awareness of personal and social reality. It may further be suggested that his addiction to alcohol was more a function of situational circumstances than of a deeply neurotic resolution of adjustmental problems. Additional support for this suggestion might be found in examination of the three scales showing significant differences at the .01 level, and further, in the comparison of scores of the Recovered Group and the Non-recovered Group within the various Classes of the scales. With reference first to the three scales; Sp (social presence), To (tolerance), and Fx (flexibility), while from different Classes, they merge in a constellation which would appear to





contribute to characteristics essential for personal effectiveness in the social sphere. From this it might be thought that the alcoholic who recovers had at one time a fairly realistic self-image based on attributes such as self-confidence, non-judgemental social beliefs, and general social flexibility.

In regard to the Classes of scales; in Class I, the area of poise, ascendancy and self-assurance, the Recovered Group scored significantly higher than the Non-recovered Group on Do (dominance), Cs (capacity for status), Sp (social presence) and Wb (sense of well-being).

For measures of socialization, maturity and responsibility, Class II, the Recovered Group scored significantly higher on all but two scales, Gi (general impression) and Cm (communality). It may be inferred from this that the Non-recovered Group in this study might be characterized as being essentially persons lacking social sensitivity, whose collective self-image is one of inferiority. This condition, it is felt, would readily be recognized in an excessive use of defence mechanisms, particularly those of rationalization, projection and denial.

Class III, measures of achievement potential and intellectual efficiency, as already noted, perhaps offers the best indication of those qualities seemingly essential for social adaptiveness and successful recovery. In all three scales--Ac (achievement via conformity), Ai (achievement via



independence), and Ie (intellectual efficiency), the Recovered Group scored significantly higher than the Non-recovered Group at the .0005 level. The importance of past experience with reality demands would thus seem to be illustrated. Creative achievement, particularly as implied in the two scales Ac (achievement via conformance) and Ai (achievement via independence), involves realistic evaluation of the self in terms of many environments and ultimate resolution of self demands with societal demands. This same challenge, it is believed, faces the alcoholic at the time he attempts to recover. The individual who succeeds is thought to do so because of a pre-existing foundation of reality-based achievements which make possible the re-establishment of a productive life pattern.

In regard to Class IV, measures of intellectual and interest modes, the Recovered Group scored significantly higher than the Non-recovered Group on the scales Py (psychological-mindedness) and Fx (flexibility). From these results it would be expected that those persons in this study who did not recover from alcoholism would characteristically be found to be unable to deal creatively with their inner needs, and to be predominantly rigid in their thought processes.

To facilitate summary of the foregoing, attention is directed to the CPI profile of means for both groups from which it will be seen that the overall scores are considerably below





normal.<sup>1</sup> This result, while not surprising in light of the generally accepted theory that habitual excessive drinking results in overall personality deterioration, has interesting implications. It would seem, for instance, that at the time of administration, the CPI assesses the kind of social and personal adjustment the individual affected during the addictive phase of his illness. That the differences between the two groups reflect both the degree of pre-addictive adjustment and the consequent adjustment during the addictive phase, seems thus to be upheld. It may further be conjectured that during the addictive phase, the now-recovered alcoholic, while less than ideally socially adequate, was to some extent able to sublimate his impulses, able to maintain a reasonable self-image, and minimize disorganization of his life pattern. The non-recovered alcoholic, conversely, thought in the first instance to be more pre-occupied with conflicts arising out of self-centredness (primary narcissism), would be expected to experience an intensification of this condition as the addictive process developed. This would lead to greater social and personal maladjustment.

In concluding this chapter, it seems reasonable to state that the results obtained in this study encourage the belief that the person with the best chance of recovering from alcoholism is one who was relatively socially adequate

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<sup>1</sup>  
See appendix "H"



prior to addiction, a finding implicit in the studies done by Straus & Bacon (1952), Fowler & Schneider (1960), Moore & Ramseur (1960) and Barron (1953). It has also been indicated that the three CPI scales in Class III, measures of achievement potential and intellectual efficiency, tentatively appear to have considerable potential as prognostic indicators. In this same connection, the evidence suggests the inclusion of the scales Wb (sense of well-being), Cs (capacity for status, Sp (social presence), To (tolerance), and Fx (flexibility). On the whole, the results of this research seem to show that there are certain psychological characteristics related to social adaptiveness which can be associated with recovery from alcoholism. The limitations of the study, of course, have to be taken into account in the interpretation of the results. It is undeniably a study of a preliminary nature using a sample which is far from being a whole cross-sectional alcoholic population. This notwithstanding, within these limitations it is felt that the CPI has been shown to have value as an instrument capable of distinguishing between a Recovered Group and a Non-recovered Group of alcoholics.



## CHAPTER VI

### CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

The aim of this study was to investigate the possibility of identifying and measuring certain psychological characteristics believed to be fundamental to recovery from alcoholism. To this end, the CPI was used in the belief that it was an instrument capable of distinguishing between these persons who recover from alcoholism and those persons who do not. Two hypotheses were formulated, both of which were confirmed to a large degree. In view of these results, it is tentatively concluded that a basis now exists for continuing research at the Alcoholism Foundation of Alberta directed toward the development of a prognostic index from selected CPI scales.

#### Recommendations

One of the major difficulties encountered by the Foundation Research Staff is concerned with making and maintaining contact with former clients. Since most research studies relative to the effect of treatment are based on follow-up data, this problem becomes crucial. It has been estimated, for instance, that in a one-year Foundation follow-up study, more than 30% of the sample are out of contact, and that in an 18 month follow-up study, this figure increases to 50%. These figures, if anything, may be regarded as ultra-





conservative since they are based only on those clients who stay in treatment for more than four interviews--approximately 50% of the total. The present study included all clients presenting themselves for treatment yet "lost" less than 19 per cent of the sample. This, it is believed, is attributable to a short follow-up period of five months. In view of this experience, it is recommended that consideration be given to research designed to investigate the possibilities of improving follow-up techniques.

Pursuing this thought, the institution of follow-up procedures immediately a client discontinues treatment might lead to profitable results for both Research and Treatment Departments. Aside from the value to the Research Department of data thus gained, the possible therapeutic value of such a measure should not be overlooked.

A second recommendation concerns the use of psychometrics during intake procedures at the Foundation. In agreement with Stephenson (1959) not a few of the Foundation staff expressed fears that administration of psychological tests would intensify resistance to treatment. While no objective measure was used, the consensus of opinion regarding the administration of the CPI during this study was most favorable. A majority of clients, it was noted, interpreted the test to be a positive first step in their recovery program. Questioning at a later date produced a common answer, "I really felt that something was being done for me." It is suggested that



the continued use of psychometrics during the intake period, rather than arousing anxiety and resistance to treatment, gives the client an encouraging sense of security of great therapeutic value.





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APPENDIX "A"

Calculation of the Differences Between  
Means on CPI Scales for Recovered  
Group and Non-Recovered Group.

Formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{X}_1 - \bar{X}_2}}$$

$$\bar{X}_1 = \text{Recovered Group}$$

$$\bar{X}_2 = \text{Non-Recovered Group}$$

The unbiased estimate of the population variance  
was obtained from the formula:

$$S_c^2 = \frac{\frac{1}{N_1} (N_1 \sum X_1^2 - (\sum X_1)^2) + \frac{1}{N_2} (N_2 \sum X_2^2 - (\sum X_2)^2)}{N_1 + N_2 - 2}$$

The standard error of the differences between  
means was obtained from the formula:

$$S_{\bar{X}_1 - \bar{X}_2} = \sqrt{(S^2/N_1) + (S^2/N_2)}$$





APPENDIX "B"

Means and Standard Deviations Calculated  
from Standard Scores on CPI scales.

The means and standard deviations for both  
the Recovered Group and Non-recovered  
Group were calculated from the  
following formulae:

Mean:  $\bar{X} = \frac{\sum_{i=1}^k f_i X_i}{N}$

Recovered Group N = 26

Non-recovered Group N = 36

Standard Deviation: this was obtained by taking  
the square root of the variance calculated from  
the formula:

$$S^2 = \frac{\frac{1}{N} (N \sum X^2 - (\sum X)^2)}{N-1}$$



APPENDIX "C"

FORMULAS USED IN THE CALCULATION  
OF CHI SQUARES

Chi squares for comparisons between the Recovered Group and the Non-Recovered Group on the variables of age and education were calculated using the following formula.

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Chi square for comparison of the two groups on the variables of marriage was derived using the formula:

$$\chi^2 = \frac{N(AD-BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$



APPENDIX "D"

MEANS OF SUBJECTS EXCLUDED FROM THE  
SAMPLE DUE TO PSYCHIATRIC DIAGNOSES  
OR INABILITY TO CONTACT

Scale	Unable to Contact N = 15	Psychiatric diagnosis N = 6
Do	42.50	47.30
Cs	40.80	38.16
Sy	41.53	39.66
Sp	47.67	41.60
Sa	46.73	49.83
Wb	40.66	29.50
Re	35.87	38.66
So	32.06	33.00
Sc	39.53	37.33
To	38.07	38.66
Gi	36.80	39.16
Cm	49.46	49.66
Ac	34.13	38.01
Ai	40.60	24.00
Ie	36.40	34.50
Py	40.40	44.50
Fx	48.67	49.66
Fe	52.86	55.50





APPENDIX "E"

OCCUPATIONAL CLASSIFICATION FOR  
TOTAL GROUP AND SUB GROUPS

Classification	Total Group N=62	Recovered Group N=26	Non-recovered Group N=36
General Manager	2	1	1
Bank Manager	2	-	2
Office Manager	4	2	2
Office Worker	1	-	1
Geophysicist	1	1	-
Auditor	2	1	1
Cleric	1	1	-
Owner of Business	3	2	1
Pilot	2	1	1
R.C.A.F. Mechanic	1	1	-
Foreman	2	1	1
Maint. Supervisor	1	-	1
Maint. Man	1	-	1
Salesman	6	2	4
Master Mechanic	1	-	1
Mechanic	1	-	1
Rancher	1	1	-
Farmer	2	1	1
Estimator	1	1	-
Steam Engineer	2	1	1
Tinsmith	2	1	1
Carpenter	4	2	2
Painter	4	2	2
Plumber	3	1	2
Machinist	1	-	1
Coal Miner	2	1	1
Lineman	1	-	1
Butcher	1	-	1
Truck Driver	1	-	1
Construction	1	-	1
Laborer	4	1	3
Hospital Orderly	1	1	-



APPENDIX "F"

ALCOHOLISM FOUNDATION OF ALBERTA  
CLIENT DROP-OUT\* PERCENTAGE FOR  
FIVE YEAR PERIOD

Year	% Drop-Out after 4 or fewer interviews
1957	59%
1958	50%
1959	52%
1960	48%
1961	44%

\* Of all clients who seek treatment at the Foundation, about one half fail to persist in treatment beyond four interviews. One third of these terminate treatment after one interview.





# California Psychological Inventory

HARRISON G. GOUGH, Ph.D.

## DIRECTIONS:

This booklet contains a series of statements. Read each one, decide how you feel about it, and then mark your answer *on the special answer sheet*. **MAKE NO MARKS ON THE TEST BOOKLET.** If you *agree* with a statement, or feel that it is true about you, answer TRUE. If you *disagree* with a statement, or feel that it is not true about you, answer FALSE.

In marking your answers on the answer sheet, make sure that the number of the statement is the same as the number on the answer sheet. Be sure to answer either TRUE or FALSE for every statement, even if you have to guess at some.

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# Appendix "H"

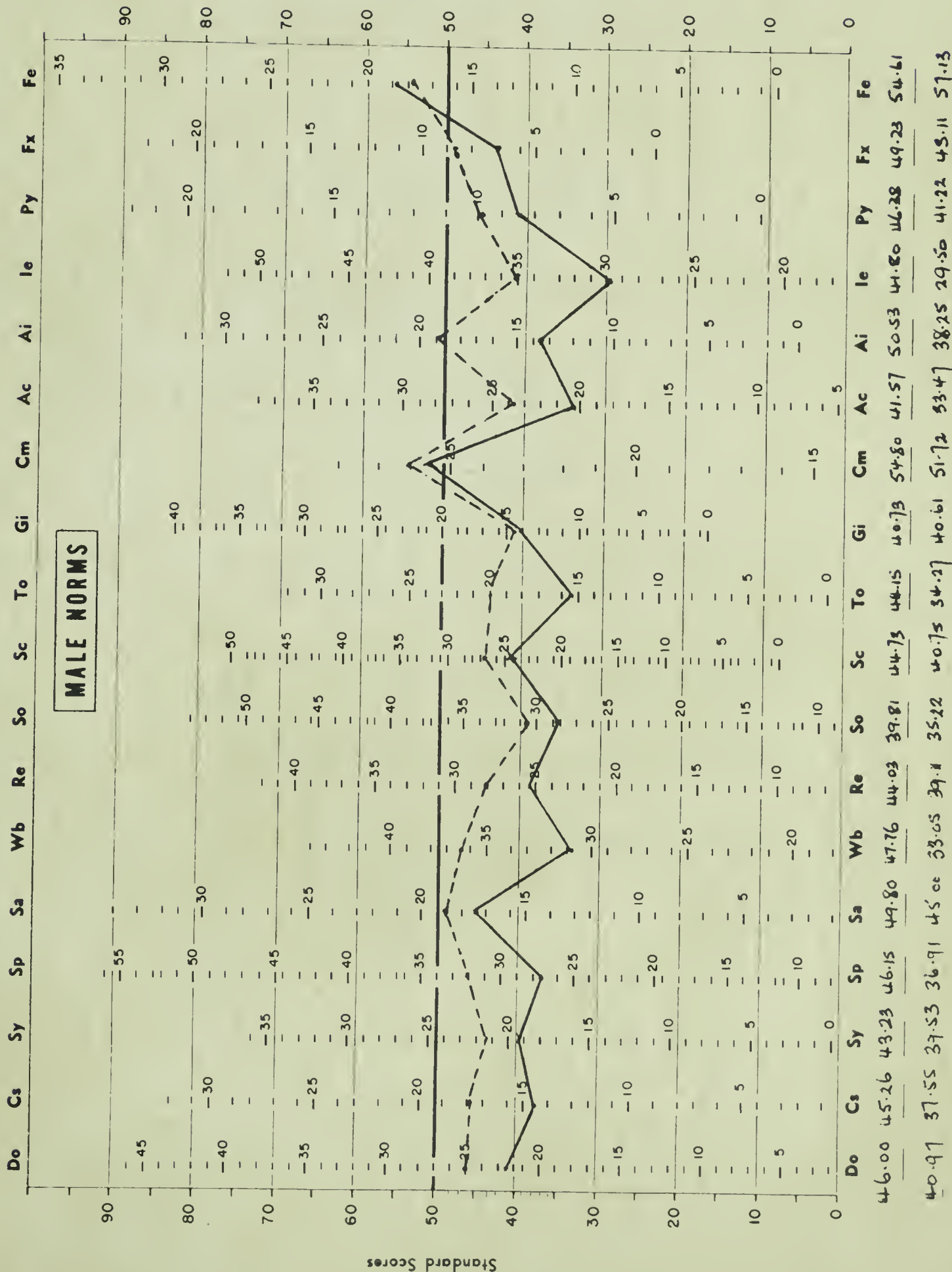
Profile of the Means for Recovered Group  
and Non-recovered Group on CPI Scales

Recovered Group----- N=26  
Non-recovered Group——— N=36

Notes:

Standard Scores

## MALE NORMS



Male Norms



APPENDIX "I"

CALIFORNIA PSYCHOLOGICAL INVENTORY

SCALES AND GROUPINGS

- CLASS I.           Measures of Poise, Ascendancy, and assurance
1. Do Dominance
  2. Cs Capacity for Status
  3. Sy Sociability
  4. Sp Social Presence
  5. Sa Self-acceptance
  6. Wb Sense of Well-being
- CLASS II.           Measures of Socialization, Maturity and Responsibility
7. Re Responsibility
  8. So Socialization
  9. Sc Self-control
  10. To Tolerance
  11. Gi Good Impression
  12. Cm Communality
- CLASS III.           Measures of Achievement Potential and Intellectual Efficiency
13. Ac Achievement via Conformance
  14. Ai Achievement via Independence
  15. Ie Intellectual Efficiency
- CLASS IV.           Measures of Intellectual and Interest Modes
16. Py Psychological-mindedness
  17. Fx Flexibility
  18. Fe Femininity











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